# CAN VENDORS EVER PROVIDE SECURE SOLUTIONS?

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# The Short Answer .....

# NO

# What does this really mean?

"[T]he malware that was used would have gotten past 90 percent of the Net defenses that are out there today in private industry and [would have been] likely to challenge even state government,"

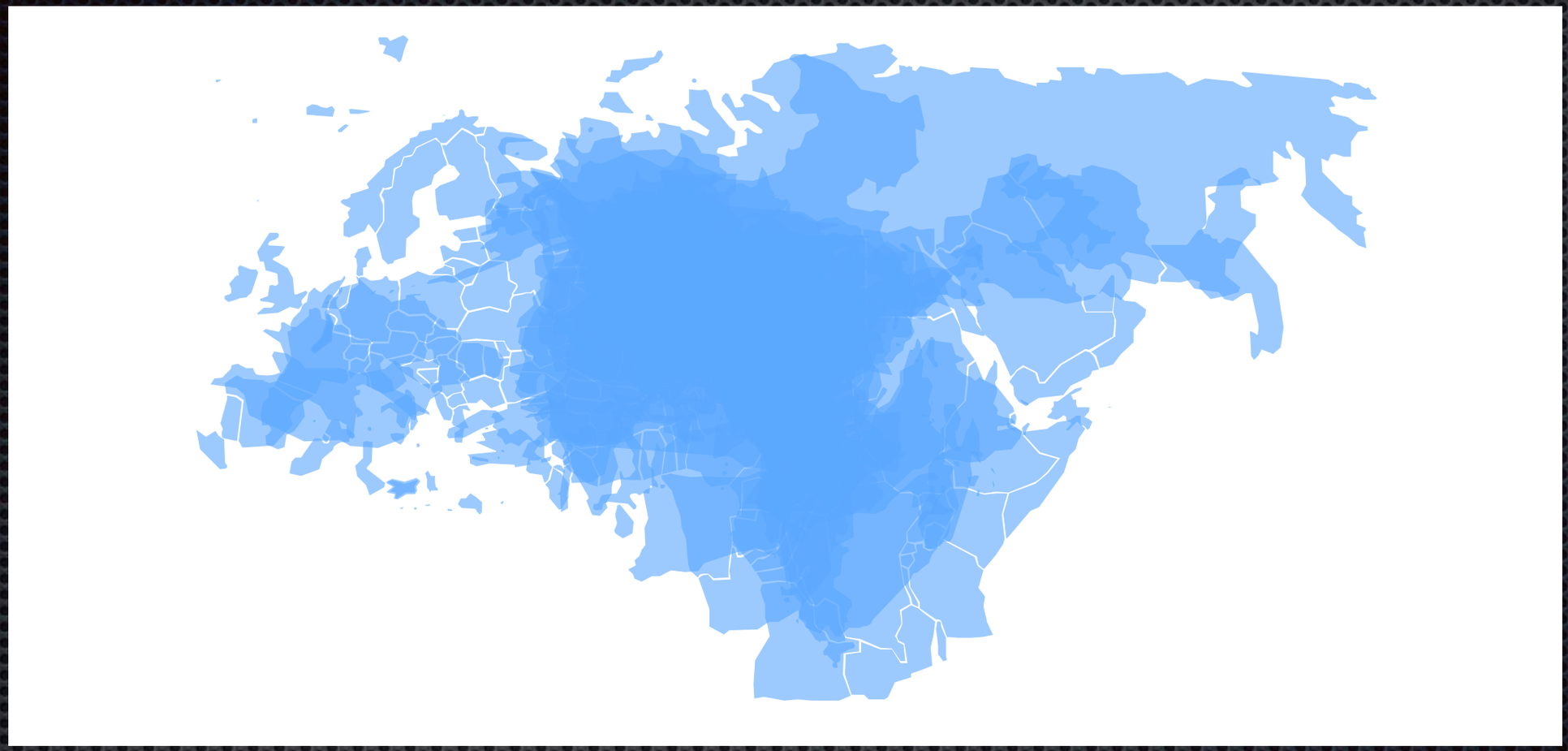
Joe Demarest, Assistant Director - US FBI's Investigation's Cyberdivision."

*What this is really saying is that when there is a will, there is always a way to violate a system.*

# Our Traditional View of the World

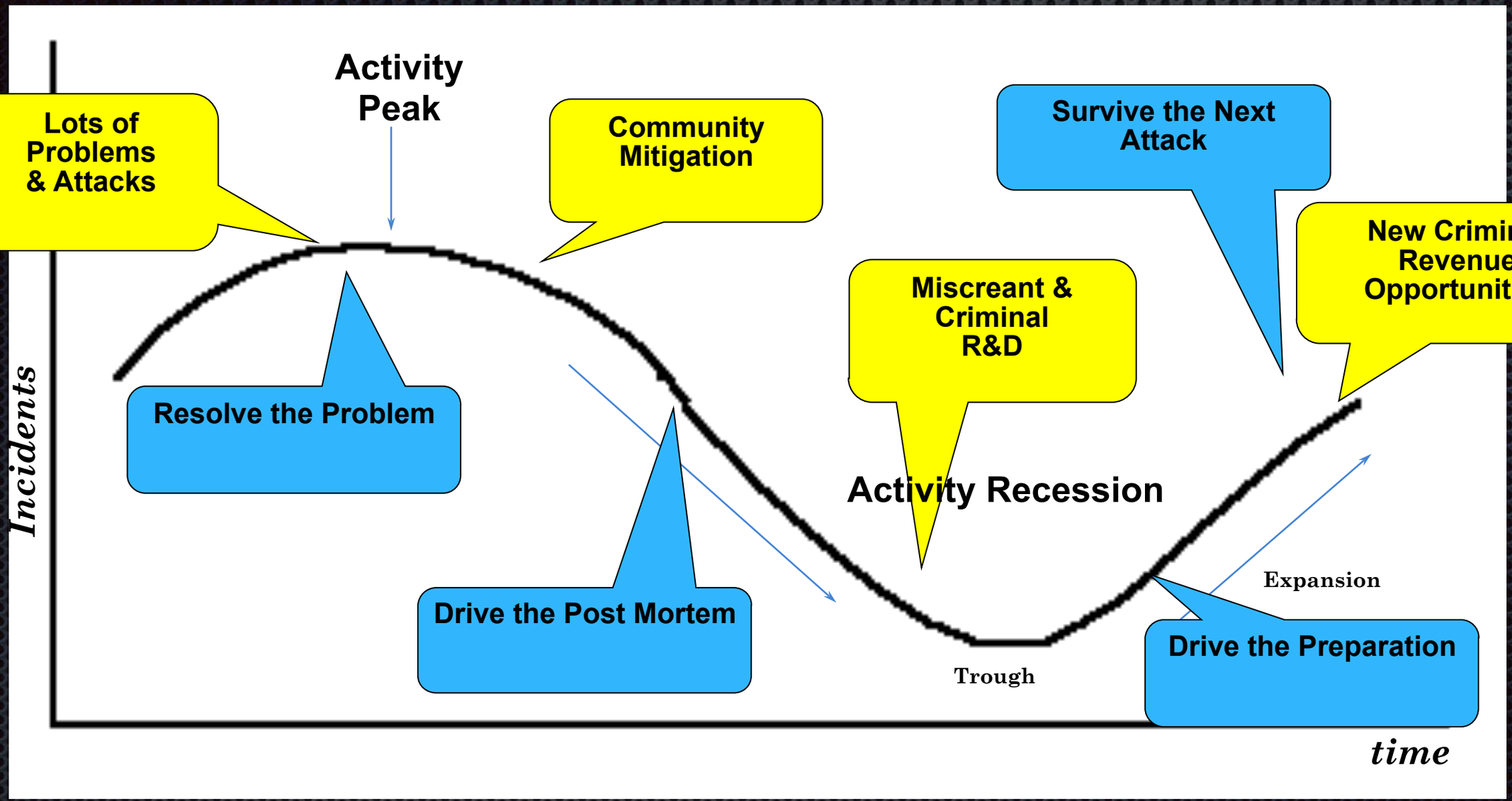
The Internet is not organized based on countries. It is a group of “Autonomous System Networks” (ASNs) all interconnected in a Global Network.

# The Reality of the Internet - No Borders



How does a government enforce the rule of law where the Internet's risk are all trans-national?

# Miscreant - Incident Economic Cycles



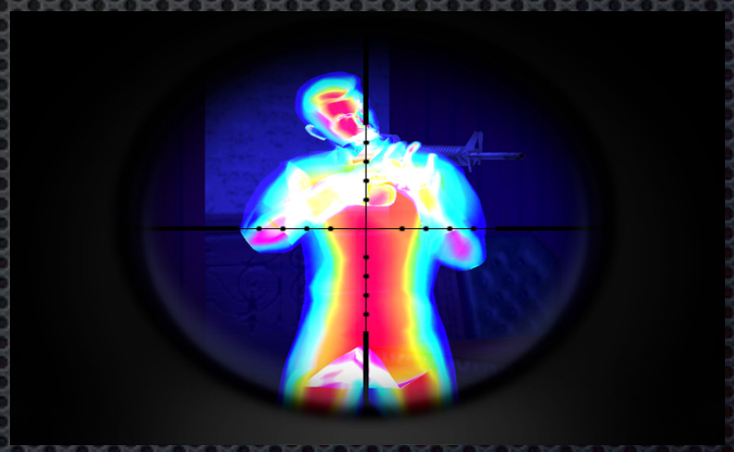

***These Cycles Repeat***

# Work on the Right Security Problem

The Good Guys are the Big Part of the Security Problem

This is nice to know

Who we need to Target



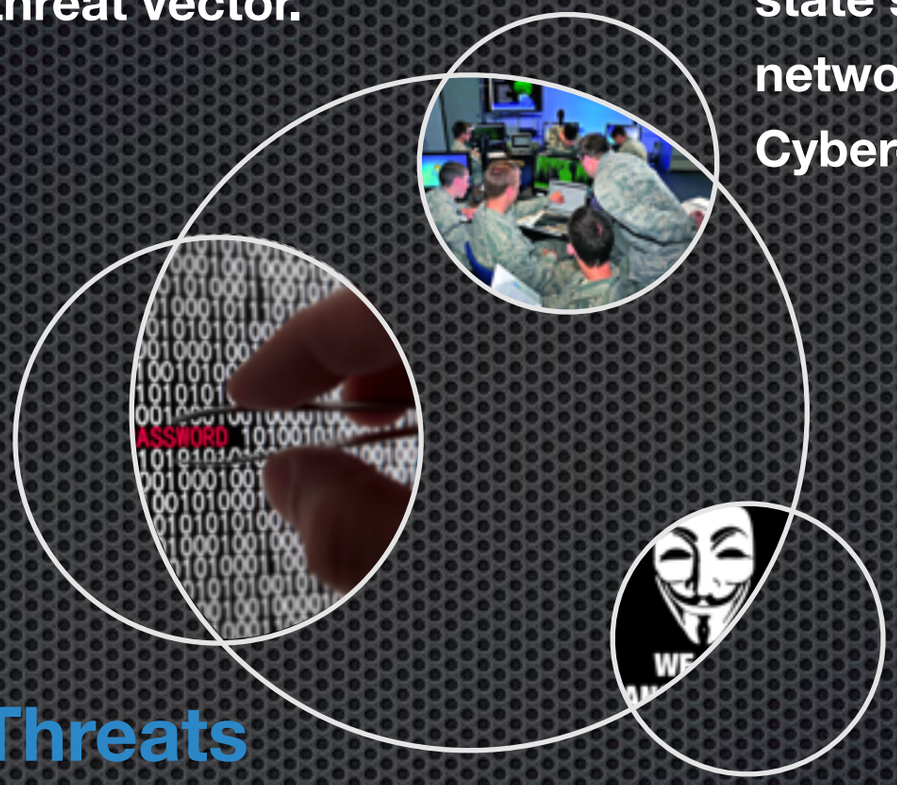
# Threat Vectors have Evolved

## Corporate Threats (New!)

The dialog between US & China will accelerate the corporate on corporate threat vector.

## Nation State Threats

Post-Snowden, the secret world of nation state security is now all in the open. Your network is a valid “Battle Space” for any Cyber-War.



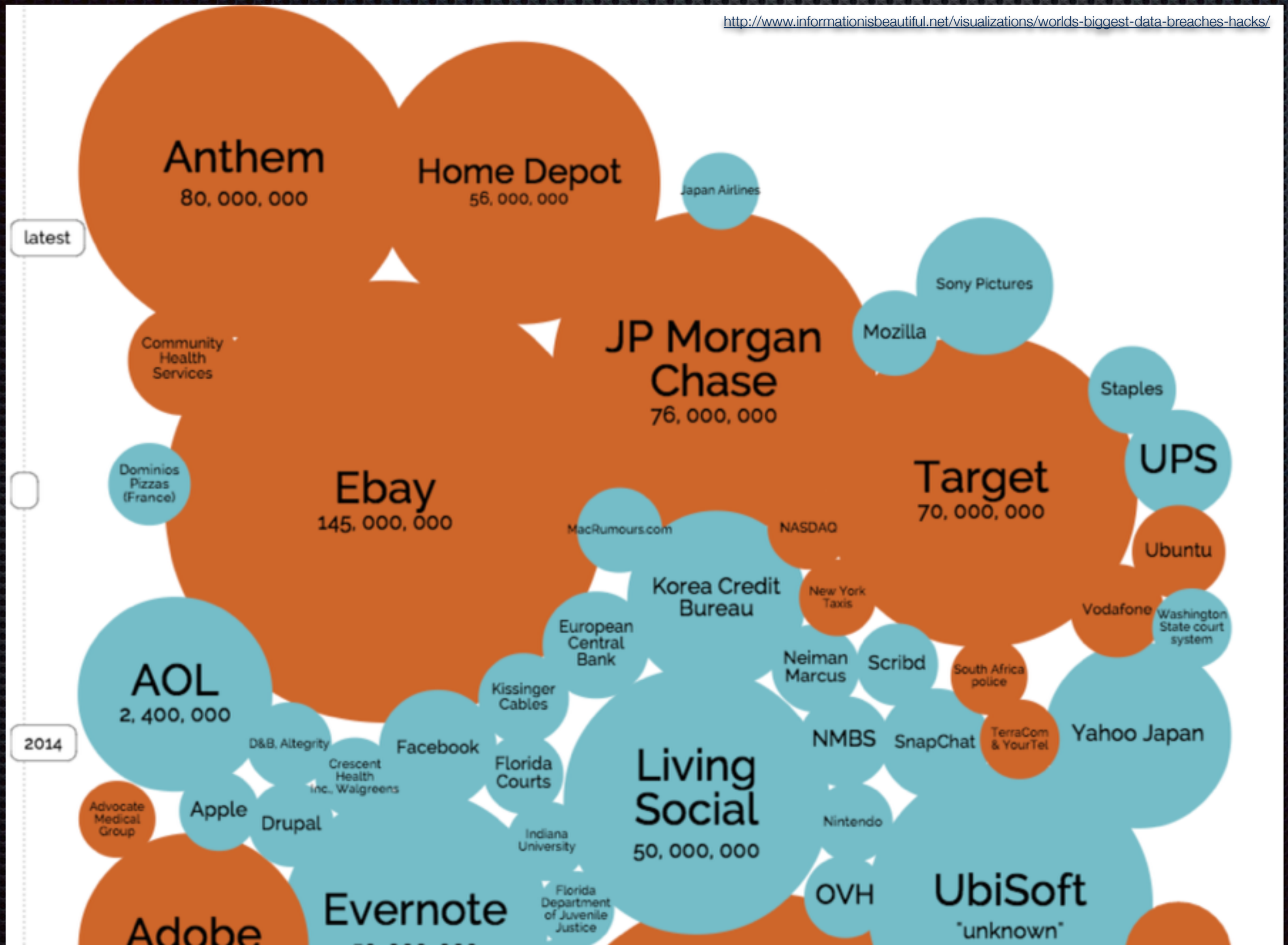
## Cyber-Criminal Threats

Cyber-Crime is an International  Legal problem that has no short term resolution. There will always be someplace in  the

## Political, Patriotic, Protestors

There are always going to be someone, somewhere, who is upset with society - with the ability to make their anxiety know through any network - any where.

# What really happens if I'm attacked?

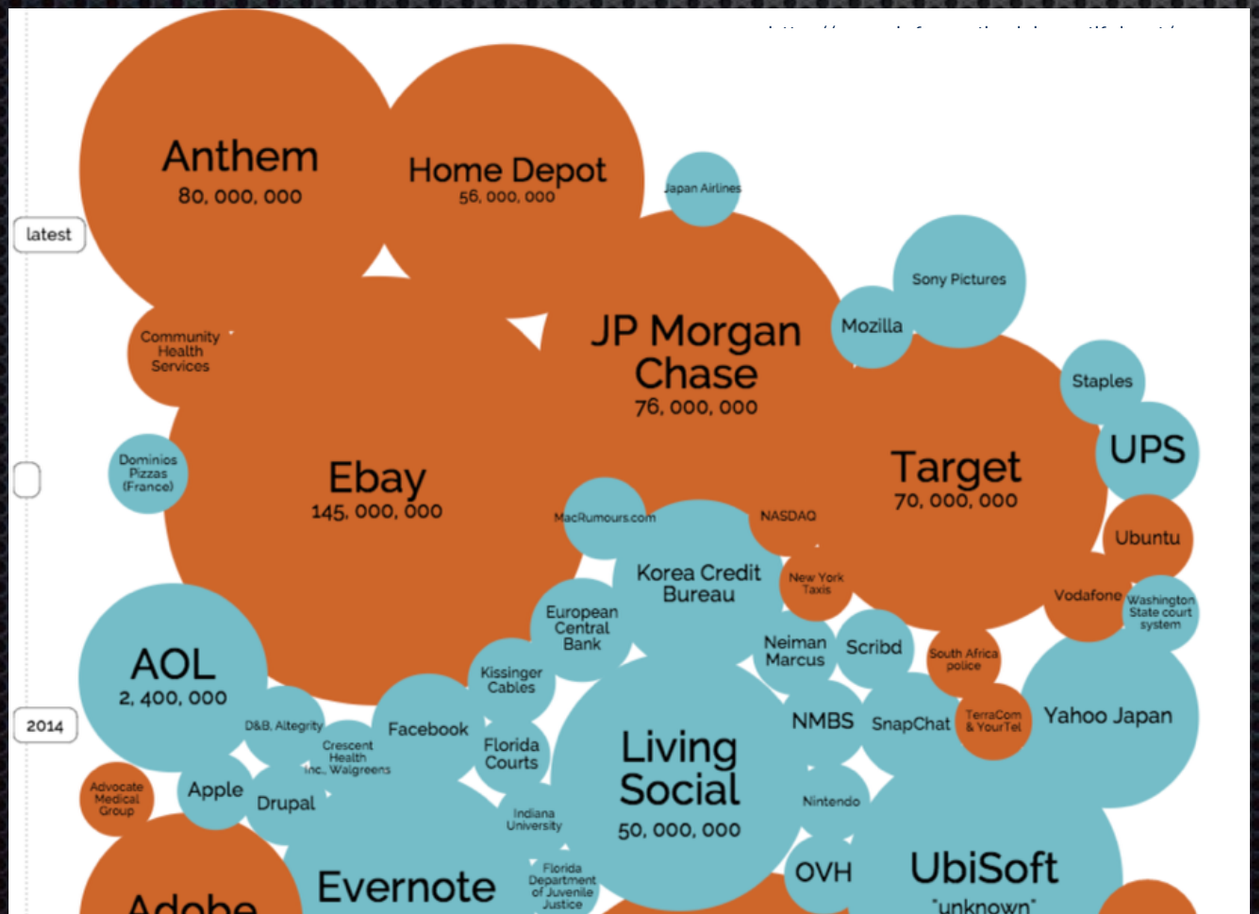


# The market does not penalize!

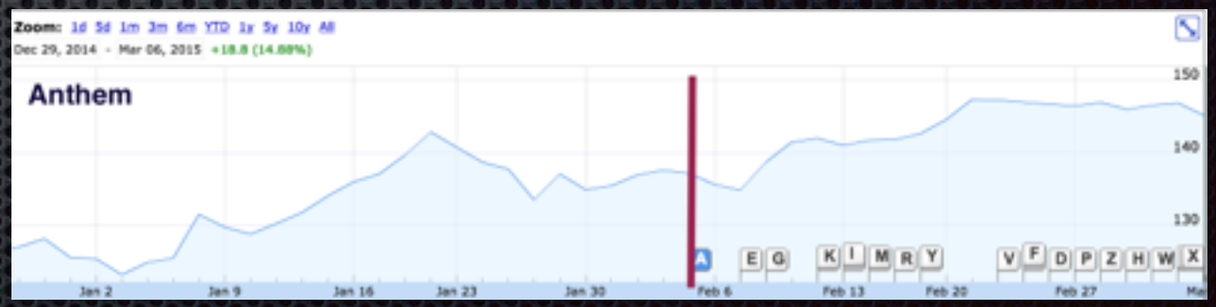
The “market” is forgiving IF you have a security reaction plan.

A security reaction plan will not prevent revenue losses, customer churn, and legal actions, but … organizations do recover from “big data breaches”









# Liability "Should be" Flowing Down Hill


**Emergency Services**

**Outage Causing Death**

**FCC Investigation**

**Provider Liability**

**Vendor Liability**

# Security Threats are a Force of Nature

- Think of the current and future security threats as a force of of the environment we live in. This is not new to human society. We have to live with the issues of nature all the time.

- Like a hurricane, it is not a matter of if, but when. Even worse, you can be in a zone where the hurricane, tornado, flood, earth quake, and blizzard are all a major risk.

Forces of Nature cannot be stopped - the only thing you can do is mitigate risk through your design, preparation, and investment.

# Key Takeaways .....

- If the threat vectors are not going away, then the risk will be persistent for the next few DECADES!
- If the market does not penalize companies for the major security violations, then there are no “market forces” to drive major security improvements.
- The massive growth in the “security eco-system” is driving decision makers into no action. They are not sure what really needs to be done.
- Vendors are not being help up as liable to security risk. This means there normal capitalistic forces that drive for change.
- Thinking of security as a “force of nature” is a more appropriate way of considering the real risk security threats have on the business and society.

# Driving Change through “Vendor Conversations”

# Checklist Approach

- Checklist are one of the most essential tools for productivity we have in the industry.
- Surprisingly, too few “Internet” and “Telecom” operators use the checklist approach to optimize their operations.
- What follows is the first in several “check list” designed for Internet Service Providers, be they Mobile, traditional Telco, Content, of ISPs.
- They can be cut/pasted and used in your organization.
- Additions to the checklist are always welcomed.


Note: If this is new to you, read the book “The Checklist Manifesto” and watch the TED talk:

http://www.ted.com/talks/atul_gawande_how_do_we_heal_medicine

* Thanks to Stephen Stuart @ Google for pointing out Atul Gawande’s book

# Check for the Operator's Conversation

- We have lots of standards, compliance guidelines, and certifications.
- What is missing is a tool to assist the operator to have a meaningful security conversation with their vendors.
- These "conversations" help the operator understand the real security maturity of their vendors. This in turn helps them determine risk within their business.
- These "security conversations" ARE NORMAL ENGINEERING DISCIPLINE! Vendors who push back on the security conversation are expressing to your and your organization their real views of "security."

# General Principles

- Set up regular meetings with your vendors to have these conversations.
- Get responses in writing from your vendors. The writing process is not a burden for the vendor. The questions asked in the checklist applies to all their customers. Every question asked is a question that would be asked by other customers.
- Do not expect perfection. No vendor has everything covered. There are always big gaps.
- Ask for the vendor's resolution plan. How will they fill the gap. Some gaps may take a long time to rectify, which is OK if the vendor is committed to change.

# Phase 1 - Review the Vendor's Vulnerability Management Process

- Does the Vendor have a Vulnerability Management Process?
- Check the vendor's website. See if they have a "/security" page with information about how to report a security vulnerability and their security team.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- Does the vendor have a Security and Vulnerability Response Team that is available 7x24, 365 days a year with English as the primary language of business?

# Phase 1 - Review the Vendor's Vulnerability Management Process

- Does the vendor participate with industry vulnerability and incident response teams?
- Does the vendor participate with the national vulnerability and incident response teams?
- How would the vendor notify our organization about a security vulnerability?

# Phase 2 - Review the Vendor's Security Development Lifecycle

- How is the vendor's SDL integrated into the vendor product development processes?
- How does the SDL process allow for rapid vulnerability fixes?
- Does the SDL process used a form of Root Cause Corrective Action (RCCA)?
- Does the vendor's SDL include regular Static Analysis Testing?

# Phase 2 - Review the Vendor's Security Development Lifecycle

- Does the the vendor use Test Driven Development (TDD) in their software deployment?
- Does the vendor use Dynamic Analysis Testing (DAST) in the vendor's development process?
- Does the vendor use the industry vulnerability classification and enumeration tools? (CVE, CWE, etc)
- Does the vendor have Regression, Stress, Performance, and Compliance System Testing?

# Phase 2 - Review the Vendor's Security Development Lifecycle

- Does the vendor use of fuzz testing in their quality processes?
- Does the vendor have documented risk assessments for all elements, protocols, systems, and solutions?
- Does the vendor use specific security testing tools for their Unit Under Test (UUT) testing?

# Phase 3 - Review the Vendor's Healthy Interaction & Transparency

- Will the vendor's Security and Vulnerability Response Team review postmortem on past vulnerabilities with our organization?
- Does the vendor bring in 3rd party penetration test and security auditors?
- Will the vendor be open to a joint table top exercise?
- Will the vendor be willing to open their code to an operator driven source code audit?

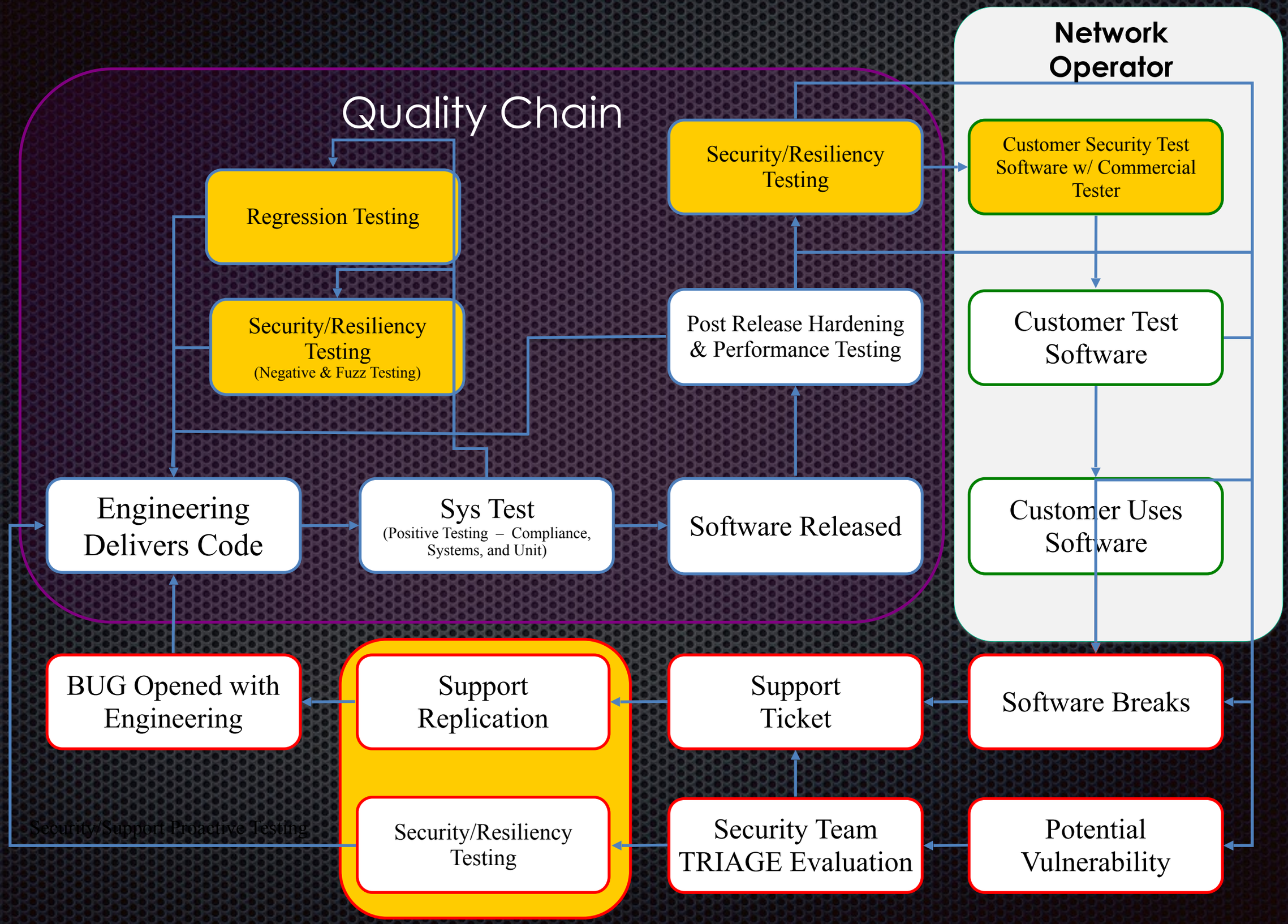
# Phase 3 - Review the Vendor's Healthy Interaction & Transparency

- Will the vendor publish the "reporter" of a security vulnerability in their security advisory?
- Does the vendor have an active bug bounty program?
- Will the vendor provide the required GPL documentation based on request for all open source software used in the organization?
- How does the vendor manage open source security vulnerabilities?

# What is Next?

- Phase 4 Conversation - Joint Reaction Plans
- Phase 5 Conversation - Review Industry Certification
- New items to being added:
  - How does the vendor protect their network? For example, how does the vendor protect their signing keys?
  - How can an vendor help during an attack (vs a vulnerability disclosure)?
  - What should the organization do to “plug in” to the vendor’s security processes?

# Partnership between Vendor & Operator



# Your Turn ….

- ✓ **Commit to do something to prepare your organization. Have the Conversations with the Vendors.**
- ✓ **The “Conversations” = “Customer Requirements” which drives change in the vendor’s priorities.**
- ✓ **Where to get the “Checklist?”**
  - www.senki.org
  - **Barry’s Linkedin Post - http://www.linkedin.com/in/barryrgreene/ or Twitter: @BarryRGreene**